

April 12, 2005
Case No. CR00249M (9640/82)
Serial No.: 10/082,900
Filed: February 26, 2002
Page 2 of 11

CLAIM LISTING

A listing of an entire set of claims 1-16 is submitted herewith per 37 CFR §1.121 to replace all prior versions, and listings, of claims in the application.

1. (Original) A method of forming a compound Single Instruction/Multiple Data instruction, said method comprising:
selecting at least two Single Instruction/Multiple Data operations of a reduced instruction set computing type; and
combining said at least two Single Instruction/Multiple Data operations to execute in a single instruction cycle to thereby yield the compound Single Instruction/Multiple Data instruction.
2. (Original) The method of claim 1, further comprising:
evaluating a processing throughput of the compound Single Instruction/Multiple Data instruction; and
determining a power consumption of the compound Single Instruction/Multiple Data instruction.
3. (Original) The method of claim 2, further comprising:
associating an energy consumption value with at least one micro-operation of the compound Single Instruction/Multiple Data instruction; and
minimizing the sum of the energy consumption value.
4. (Original) The method of claim 1, wherein the compound Single Instruction/Multiple Data instruction includes a vector add-subtract operation.
5. (Original) The method of claim 1, wherein the compound Single Instruction/Multiple Data instruction includes a vector minimum-difference operation.

April 12, 2005
Case No. CR00249M (9640/82)
Serial No.: 10/082,900
Filed: February 26, 2002
Page 3 of 11

6. (Original) The method of claim 1, wherein the compound Single Instruction/Multiple Data instruction includes a vector compare-maximum operation.

7. (Original) The method of claim 1, wherein the compound Single Instruction/Multiple Data instruction includes a vector absolute difference and add operation.

8. (Original) The method of claim 1, wherein the compound Single Instruction/Multiple Data instruction includes a vector average operation.

9. (Original) The method of claim 1, wherein the compound Single Instruction/Multiple Data instruction includes a vector scale operation.

10. (Original) The method of claim 1, wherein the compound Single Instruction/Multiple Data instruction includes conditional operations on elements of a data vector.

11. (Original) The method of claim 10, wherein the compound Single Instruction/Multiple Data instruction includes a vector conditional negate and add operation.

12. (Original) The method of claim 10, wherein the compound Single Instruction/Multiple Data instruction includes a vector select and viterbi shift left operation.

April 12, 2005
Case No. CR00249M (9640/82)
Serial No.: 10/082,900
Filed: February 26, 2002
Page 4 of 11

13. (Currently Amended) A method of estimating a relative power consumption of a software algorithm including a plurality of compound Single Instruction/Multiple Data instructions of a reduced instruction set computing type, the method comprising:

establishing a relative energy database listing a plurality of micro-operations, each micro-operation having an associated relative energy value; and
determining the relative power consumption of the ~~software algorithm~~ plurality of compound Single Instruction/Multiple Data instructions incorporating one or more of the micro-operations based on the relative energy values of the incorporated micro-operations.

14. (Original) The method of claim 13, further comprising:

executing the software algorithm on a simulator; and
computing a sum of the relative energy values of the micro-operations contained in the executed software algorithm.

15. (Cancelled) The method of claim 13, wherein:

at least one of the micro-operations of the software algorithm is executed on a Single Instruction/Multiple Data processing unit.

16. (Currently Amended) A method for estimating the absolute power consumption of a software algorithm, comprising:

determining a plurality of relative power estimates of instructions of a microprocessor;
simulating a software algorithm including one or more compound Single Instruction/Multiple Data instructions of a reduced instruction set computing type;
and
determining an absolute power estimate of a software algorithm to be executed by the microprocessor based on the relative power estimates.